Z97 OC FORMULA

INTEL® Z97 CHIPSET

PRODUCT BRIEF

- ASRock Super Alloy
  - XXL Aluminum Alloy Heatsink
  - Premium Alloy Choke (Reduces 70% core loss compared to iron powder choke)
  - Dual-Stack MOSFET (DSM)
  - NexFET™ MOSFET
  - 12K Platinum Caps (100% Japan made high quality conductive polymer capacitors)
  - Sapphire Black PCB
- OC Formula Kit
  - OC Formula Power Kit - 12 Phase CPU Power design + 4 Phase Memory Power design, Digi Power, Multiple Filter Cap, Jumbo V
  - OC Formula Connector Kit - Hi-Density Power Connector, 15µ Gold Contact (CPU socket, memory sockets and PCIE x16 slots)
  - OC Formula Cooling Kit - 8 Layer PCB, 4 x 2oz copper
  - OC Formula Monitor Kit - Multi Thermal Sensor
- Supports 5th Generation Intel® Core™ i7/i5/i3/Pentium®/Celeron® Processors (Socket 1150)
- Supports New 4th and 4th Generation Intel® Xeon®/Core™ i7/i5/i3/Pentium®/Celeron® Processors (Socket 1150)
- Supports Dual Channel DDR3 3400+(OC)
- 3 PCIe 3.0 x16, 1 PCIe 2.0 x16, 2 PCIe 2.0 x1
- Supports AMD 4-Way CrossFireX and NVIDIA Quad SLI
- 7.1 CH HD Audio with Content Protection (Realtek ALC1150 Audio Codec), Supports Purity Sound™ 2 & DTS Connect
- Qualcomm® Atheros® Killer™ LAN
- 1 HDMI, 1 SATA Express, 8 SATA3, 1 M.2 (Gen2 x2/SATA)
- 8 USB 3.0 (2 Front, 6 Rear), 6 USB 2.0 (2 Front, 4 Rear)
- 1 COM Port Header, 2 V-Probe, Rapid OC, PCIe ON/OFF 1 Thunderbolt AIC Connector
- Supports Conformal Coating, Fine-Tuning V-Controller, Timing Configurator, ASRock HDD Saver Technology, ASRock Cloud, APP Shop, NickShih's OC Profile, Formula Drive

Super Alloy Motherboard — Stable and Reliable

OC Formula Kit

Conformal Coating

Killer E2200 Gaming Networking

Purity Sound 2

ASRock APP SHOP

ASRock Cloud — Orbweb ME Professional USD$ 49.99 1-year subscription FREE

M.2 Socket

DETAIL SPECIFICATION

Platform	- ATX Form Factor - High Density Glass Fabric PCB

Unique Feature	- ASRock Super Alloy
	  - XXL Aluminum Alloy Heatsink
	  - Premium Alloy Choke (Reduces 70% core loss compared to iron powder choke)
	  - Dual-Stack MOSFET (DSM)
	  - NexFET™ MOSFET
	  - 12K Platinum Caps (100% Japan made high quality conductive polymer capacitors)
	  - Sapphire Black PCB
	- ASRock HDD Saver Technology
	- ASRock Full Spike Protection
	- ASRock Conformal Coating
	- ASRock Cloud
	- ASRock APP Shop

OC Formula Kit	OC Formula Power Kit - 12 Phase CPU Power design + 4 Phase Memory Power design - Digi Power (CPU and Memory) - Dual-Stack MOSFET (DSM) - Multiple Filter Cap (MFC) (Filter different noise by 3 different capacitors: DIP solid cap, POSCAP and MLCC) - Jumbo V OC Formula Connector Kit - Hi-Density Power Connector (8 pin) - 15µ Gold Contact (CPU socket, memory sockets and PCIE x16 slots) OC Formula Cooling Kit - 8 Layer PCB - 4 x 2oz copper OC Formula Monitor Kit - Multi Thermal Sensor
CPU	- Supports 5th Generation Intel® Core™ i7/i5/i3/Pentium®/Celeron® Processors (Socket 1150) - Supports New 4th and 4th Generation Intel® Xeon®/Core™ i7/i5/i3/Pentium®/Celeron® Processors (Socket 1150) - Digi Power design - 12 Power Phase design - Supports Intel® Turbo Boost 2.0 Technology - Supports Intel® K-Series unlocked CPUs - Supports ASRock BCLK Full-range Overclocking
Memory	- Dual Channel DDR3 Memory Technology - 4 x DDR3 DIMM Slots - Supports DDR3 3400+(OC)/2933(OC)/2800(OC)/2400(OC)/2133(OC)/1866(OC)/1600/1333/1066 non-ECC, un-buffered memory - Max. capacity of system memory: 32GB - Supports Intel® Extreme Memory Profile (XMP) 1.3 / 1.2
Expansion Slot	- 3 x PCI Express 3.0 x16 Slots (PCIE1/PCIE2/PCIE4: single at x16 (PCIE1); dual at x8 (PCIE1) / x8 (PCIE2); triple at x8 (PCIE1) / x4 (PCIE2) / x4 (PCIE4)) - 1 x PCI Express 2.0 x16 Slot (PCIE6: x4 mode) - 2 x PCI Express 2.0 x1 Slots - Supports AMD Quad CrossFireX™, 4-Way CrossFireX™, 3-Way CrossFireX™ and CrossFireX™ - Supports NVIDIA® Quad SLI™ and SLI™
Graphics	* Intel® HD Graphics Built-in Visuals and the VGA outputs can be supported only with processors which are GPU integrated. - Supports Intel® HD Graphics Built-in Visuals : Intel® Quick Sync Video with AVC, MVC (S3D) and MPEG-2 Full HW Encode1, Intel® InTru™ 3D, Intel® Clear Video HD Technology, Intel® Insider™, Intel® HD Graphics 4400/4600 - Pixel Shader 5.0, DirectX 11.1 - Max. shared memory 1792MB - Supports HDMI with max. resolution up to 4K x 2K (4096x2304) @ 24Hz - Supports Auto Lip Sync, Deep Color (12bpc), xvYCC and HBR (High Bit Rate Audio) with HDMI Port (Compliant HDMI monitor is required) - Supports HDCP with HDMI Port - Supports Full HD 1080p Blu-ray (BD) playback with HDMI Port

Audio	- 7.1 CH HD Audio with Content Protection (Realtek ALC1150 Audio Codec)
	- Premium Blu-ray Audio support
	- Supports Surge Protection (ASRock Full Spike Protection)
	- Supports Purity Sound™ 2
	  - Nichicon Fine Gold Series Audio Caps
	  - 115dB SNR DAC with Differential Amplifier
	  - TI® NE5532 Premium Headset Amplifier (Supports up to 600 Ohm headsets)
	  - Direct Drive Technology
	  - EMI Shielding Cover
	  - PCB Isolate Shielding
	- Supports DTS Connect

LAN	- PCIE x1 Gigabit LAN 10/100/1000 Mb/s - Qualcomm® Atheros® Killer™ E2200 Series - Supports Qualcomm® Atheros® Security Wake On Internet Technology - Supports Wake-On-LAN - Supports Lightning/ESD Protection (ASRock Full Spike Protection) - Supports Energy Efficient Ethernet 802.3az - Supports PXE
Rear Panel I/O	- 1 x PS/2 Mouse/Keyboard Port - 1 x HDMI Port - 1 x Optical SPDIF Out Port - 4 x USB 2.0 Ports - 4 x USB 3.0 Ports (ASMedia ASM1074 hub) (Supports ESD Protection (ASRock Full Spike Protection)) - 2 x USB 3.0 Ports (Intel® Z97) (Supports ESD Protection (ASRock Full Spike Protection)) - 1 x RJ-45 LAN Port with LED (ACT/LINK LED and SPEED LED) - 1 x Clear CMOS Switch - HD Audio Jacks: Rear Speaker / Central / Bass / Line in / Front Speaker / Microphone
Storage	- 6 x SATA3 6.0 Gb/s Connectors by Intel® Z97, support RAID (RAID 0, RAID 1, RAID 5, RAID 10, Intel Rapid Storage Technology 13 and Intel Smart Response Technology), NCQ, AHCI, Hot Plug and ASRock HDD Saver Technology - 2 x SATA3 6.0 Gb/s Connectors by ASMedia ASM1061, support NCQ, AHCI, Hot Plug and ASRock HDD Saver Technology - 1 x SATA Express Connector (shared with SATA3_4, SATA3_5 and M.2 Socket) * Support to be announced - 1 x M.2_SSD (NGFF) Socket 3, supports M.2 SATA3 6.0 Gb/s module and M.2 PCI Express module up to Gen2 x2 (10 Gb/s)
Connector	- 1 x COM Port Header - 1 x TPM Header - 1 x Power LED header - 2 x CPU Fan Connectors (1 x 4-pin, 1 x 3-pin) - 4 x Chassis Fan Connectors (1 x 4-pin, 3 x 3-pin) - 1 x Power Fan Connector (3-pin) - 1 x 24 pin ATX Power Connector - 2 x 8 pin 12V Power Connectors (Hi-Density Power Connector) - 1 x HDD Saver Connector - 1 x PCIe Power Connector - 1 x Front Panel Audio Connector - 1 x Thunderbolt AIC Connector - 1 x USB 2.0 Header (Supports 2 USB 2.0 ports) (Supports ESD Protection (ASRock Full Spike Protection)) - 1 x USB 3.0 Header (Supports 2 USB 3.0 ports) (Supports ESD Protection (ASRock Full Spike Protection)) - 1 x Power Switch with LED - 1 x Reset Switch with LED - V-Probe™: 2 x 7-set of onboard voltage measurement points laid - Rapid OC Buttons: +/- buttons to adjust OC frequency - 1 x Menu Button - 1 x PCIe ON/OFF Switch - 1 x Post Status Checker (PSC) - 1 x Slow Mode Switch - 1 x LN2 Mode Switch - 1 x BIOS Selection Switch
BIOS Feature	- 2 x 64Mb AMI UEFI Legal BIOS with multilingual GUI support (1 x Main BIOS and 1 x Backup BIOS) - Supports Secure Backup UEFI Technology - ACPI 1.1 Compliant wake up events - SMBIOS 2.3.1 Support - CPU, DRAM, PCH 1.05V, PCH 1.5V Voltage Multi-adjustment
Support CD	- Drivers, Utilities, AntiVirus Software (Trial Version), Google Chrome Browser and Toolbar, Start8 (30 days trial), Orbweb.ME Professional (Win 8.1 / 7), Killer Network Manager
Software and UEFI	Software - ASRock Formula Drive - ASRock Disk Health Report - ASRock USB Key - ASRock Fine-Tuning V-Controller - ASRock Timing Configurator - ASRock APP Charger - ASRock XFast RAM - ASRock Restart to UEFI UEFI - ASRock Full HD UEFI - ASRock My Favorites in UEFI - ASRock UEFI Guide - ASRock NickShih's OC Profile - ASRock Instant Flash - ASRock Internet Flash - ASRock Crashless BIOS - ASRock OMG (Online Management Guard) - ASRock UEFI System Browser - ASRock UEFI Tech Service - ASRock Dehumidifier - ASRock Easy RAID Installer - ASRock Easy Driver Installer
Hardware Monitor	- CPU/Chassis temperature sensing - CPU/Chassis/Power Fan Tachometer - CPU/Chassis Quiet Fan (Auto adjust chassis fan speed by CPU temperature) - CPU/Chassis Fan multi-speed control - Multi Thermal Sensor - Voltage monitoring: +12V, +5V, +3.3V, CPU Input Voltage, CPU Internal Voltages
OS	- Microsoft® Windows® 8.1 32-bit / 8.1 64-bit / 8 32-bit / 8 64-bit / 7 32-bit / 7 64-bit
Certifications	- FCC, CE, WHQL - ErP/EuP ready (ErP/EuP ready power supply is required)
Accessories	- 1 x ASRock Flexible SLI Bridge Connector Cable - Quick Installation Guide, Support CD, I/O Shield - 4 x SATA Data Cables - 1 x HDD Saver Cable - 1 x Screw for M.2_SSD (NGFF) Socket 3

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Z97 OC FORMULA

INTEL® Z97 CHIPSET

ASRock

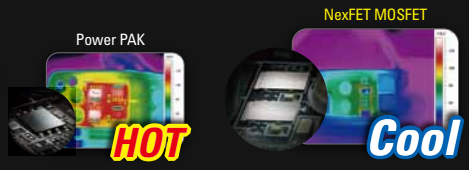
Super Alloy

Motherboard

Stable and Reliable

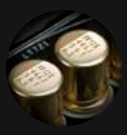
NexFET MOSFET for Memory Power

The next generation NexFET MOSFETs provide lower Rds(on) 2.9 mΩ, delivering higher efficiency and lower temperature.



12K Platinum Caps

Supreme 12K platinum caps! The industry's longest lifespan - 12,000 hours.*



Durability

ASRock 12K Platinum Caps

12,000 hours*

20% Longer!

Others' High-End MBs Caps

10,000 hours

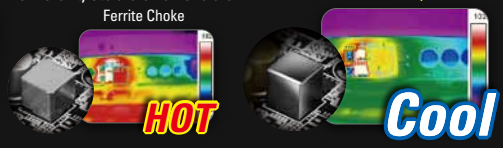
* Tested under industry standard 105 degree Celsius ambient temperature.

XXL Aluminum Alloy Heatsink Design

The extra large massive aluminum alloy heatsinks dramatically take away heat and cool down MOSFETs, chipsets.

Premium Alloy Choke

The new generation alloy chokes effectively increase up to 90% saturation current and feature a highly magnetic and heat resistant design, making the motherboard more efficient, stable and reliable.



Dual-Stack MOSFET for CPU Power

Stacking two silicon dies into one MOSFET, DSM provides larger die area and extreme low Rds(on) 1.2 mΩ, so the power supply for the CPU Vcore is more efficient.

Sapphire Black PCB

Pure black PCB appearance. The new Sapphire Black PCB represents rock-solid quality and gives the motherboard a more mysterious touch.

OC FORMULA Kit

POWER KIT

12 Phase CPU Power Design

4 Phase Memory Power Design

Coupled with a 12 Phase CPU Power Design plus a 4 Phase Memory Power Design, this motherboard provides completely smooth power delivery to the CPU and memory. Offering unmatched overclocking capabilities and enhanced performance with the lowest temperature.

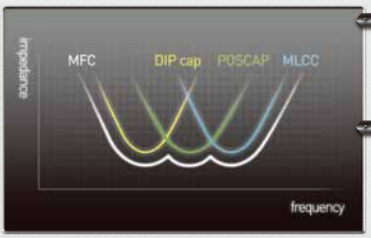
Digi Power

Jumbo V

Beyond the standard voltage support, this motherboard comes with a special electronic circuit design, which unlocks voltage limitations and allows overclockers to adjust the CPU Vcore / CPU Cache / VCCM voltage up to 3V.

* Please note that overclocking may cause damage to your CPU and motherboard. It should be done at your own risk and expense.

This motherboard uses a digital PWM (Pulse-Width Modulation) design, providing CPU Vcore and memory voltage more efficiently and smoothly.



Multiple Filter Cap (MFC)

With the combined power of three kinds of capacitors, MFC allows users to overclock their PC rig to extreme levels without worrying about the hardware components.

CONNECTOR KIT

Hi-Density Power Connector

Hi-Density Power Connectors can reduce 23% power loss and decrease the connector's temperature up to 22°C.

15μ Gold Contact

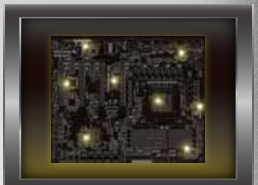
This motherboard provides 15μ gold within the CPU socket, DRAM slots and PCIe x16 slots, thus delivering better anti-oxidation protection than usual.

COOLING KIT

8 Layer PCB

The 8 Layer PCB comes with 4 sets of 2 ounce copper inner layers, delivering lower temperature and higher energy efficiency for overclocking.

MONITOR KIT



Multi Thermal Sensor

Users may precisely keep track and control the temperature of each part of their motherboard when overclocking.

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Waterproof by Conformal Coating

ASRock has implemented a special layer of Conformal Coating on Z97 OC Formula, which makes the motherboard invulnerable to conductive liquids, corrosion and dust.

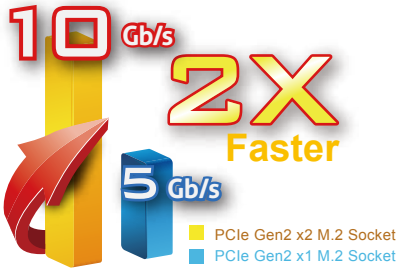
* The pins need to stay conductive therefore they are not covered by Conformal Coating

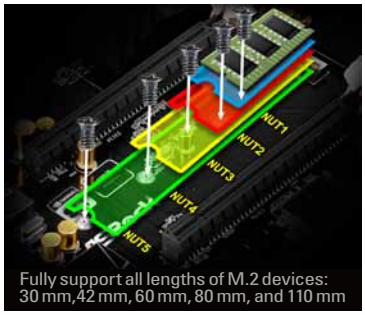
5 Year Warranty OC FORMULA SOLID AS ROCK

M.2 Socket (PCIe Gen2 x2/SATA)

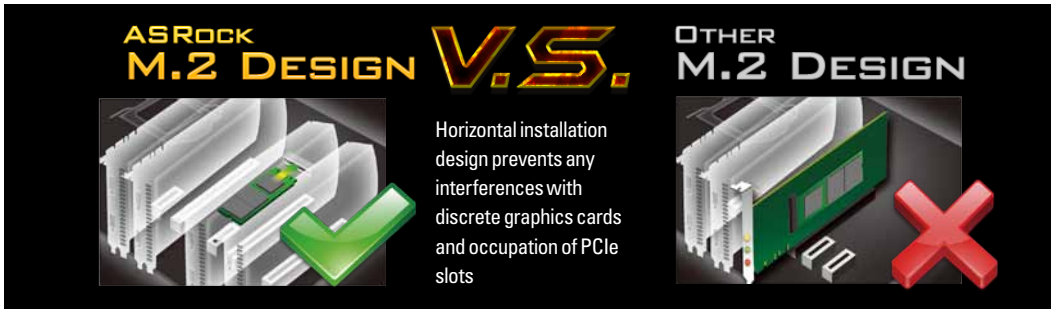
M.2 SOCKET

The onboard M.2 socket is a new interface for connecting Next Generation Form Factor (NGFF) solid state drives or other devices. ASRock supports M.2 SATA3 6.0 Gb/s modules and M.2 PCI Express modules up to Gen2 x2 10 Gb/s, which is 2X faster compared to other M.2 Gen2 x1 solutions that are limited to 5 Gb/s.





Fully support all lengths of M.2 devices: 30 mm, 42 mm, 60 mm, 80 mm, and 110 mm


ASRock M.2 Design
V.S.
Other M.2 Design
Horizontal installation design prevents any interferences with discrete graphics cards and occupation of PCIe slots

Purity Sound™ 2

Purity Sound™ 2 includes 7.1 CH HD audio with Realtek ALC1150 audio codec, 115dB SNR DAC with Differential Amplifier, cap less Direct Drive technology, EMI shielding cover, PCB isolate shielding and DTS Connect. As Nichicon audio capacitors are what every audiophile has been longing for on a PC, ASRock applied these high quality capacitors for Purity Sound™ 2.

Lower Noise Level & Pure Sound Performance

ASRock Cloud

ASRock Cloud* technology makes your mobile devices connect to your PC seamlessly and supports multi devices for accessing File Explorer cloud service simultaneously! We offer a one-year subscription to Orbweb.ME Professional version, a personal cloud service which is $49.99 per year. It allows you to get connected with your PC's files, music, photos, and video clips remotely with tablets anytime, anywhere. Plus an additional one-month upgrade to Orbweb.ME Ultimate package with Remote Desktop function is also available.

* OrbWeb ME is provided by a third party. Restriction may apply and the offer is subject to change, termination or discontinuation by the third party without prior notice. Please visit the website for further details: http://www.asrock.com/feature/cloud/index.html

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INTEL® Z97 CHIPSET

ASRock

ASRock APP Shop

We provide various apps and support software for users to download. You can easily optimize your system and keep your motherboard up to date with ASRock APP Shop.

SATA Express Connector

The SATA Express* interface provides PCIe Gen2 x2 (10Gb/s) data transfer speed. This motherboard offers the latest SATA Express connector to enthusiasts to enjoy the ultimate performance.

* Support to be announced.

DDR3 3400+(OC)

ASRock 9-Series motherboards unlock maximum memory performance, coming with 4 DIMM slots for dual-channel memory, supporting up to DDR3 3400+(OC) MHz!

HDD Saver Technology

There's a dedicated 4-pin HDD Saver Connector placed near the SATA ports. By connecting it to the HDDs, you can shut down or turn on the HDDs via software when needed. HDD Saver Technology secures more privacy, saves more energy, and extends HDD life.

Killer™ E2200

Delivering faster networking performance for time-sensitive UDP (User Datagram Protocol) based applications, such as high quality media streaming.

Rapid OC

The onboard Rapid OC buttons allow overclocking enthusiasts to manually raise or lower the system's CPU ratio, BCLK frequency or CPU Vcore voltage. Fast and simple, just use the buttons to find your CPU's best margin.

PCIe ON/OFF

For those who constantly need to remove or reinstall their PCIe cards, but fear of damaging the motherboard and its precious components, use the PCIe ON/OFF switches on the motherboard to enable or disable the PCIe slots with a flick of your finger.

Fine-Tuning V-Controller

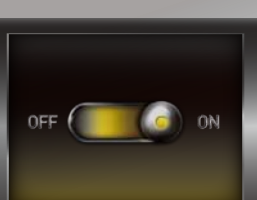
Fine-Tuning V-Controller is a massive collection of voltage fine tuning options in the ASRock UEFI Setup Utility. It provides more than enough voltage configuration options for professional overclockers who wish to pursuit extremes.

Timing Configurator

Timing Configurator is an independent application that runs under Windows® OS, it allows users to monitor an abundant collection of subtle DRAM timing values immediately and easily.

Nick Shih's OC Profile

No matter whether you are still a newbie with absolutely zero experience or a veteran who is already pretty skillful in overclocking, the legendary overclocker Nick Shih has added a few presets for different levels of overclocking called Nick Shih's OC Profile. Now is your chance to learn a few tricks from the champion.



LN2 Mode

Rules are made for breaking! Use the onboard switch to activate LN2 Mode to disable the CPU's thermal protection. Explore beyond the limits and keep your fingers crossed.

Slow Mode

Patience is a virtue, and it may also prove itself useful while overclocking. Use the onboard switch to toggle Slow Mode for forcing your CPU to run at its lowest frequency.

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